

Express Mail No.: EV719380358US
International Application No.: PCT/JP2004/011401
International Filing Date: 2 August 2004
Preliminary Amendment

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) An implantable synthetic tissue.
2. (Original) A synthetic tissue according to claim 1, which is biologically organized in the third dimensional direction.
3. (Original) A synthetic tissue according to claim 1, which has biological integration capability with surroundings.
4. (Original) A synthetic tissue according to claim 3, wherein the biological integration capability includes capability to adhere to surrounding cells and/or extracellular matrices.
5. (Original) A synthetic tissue according to claim 1, which comprises cells.
- 6.-7. Canceled
8. (Currently Amended) A synthetic tissue according to claim 1[7], wherein the extracellular matrix further contains at least one selected from the group consisting of collagen I, collagen III, and vitronectin [and fibronectin].

Express Mail No.: EV719380358US
International Application No.: PCT/JP2004/011401
International Filing Date: 2 August 2004
Preliminary Amendment

9. (Currently Amended) A synthetic tissue according to claim 1[7], wherein the extracellular matrix contains collagen I, collagen III, vitronectin and fibronectin.

10. (Currently Amended) A synthetic tissue according to claim 1[7], wherein the extracellular matrix contains vitronectin.

11. (Currently Amended) A synthetic tissue according to claim 1[7], wherein the extracellular matrix contains fibronectin.

12. (Currently Amended) A synthetic tissue according to claim 1[7], wherein the extracellular matrix contains collagen I and collagen III, the collagen constitutes 5% to 25% of the tissue, and the ratio of the collagen I to the collagen III is between 1:10 and 10:1.

13.-14. Canceled

15. (Currently Amended) A synthetic tissue according to claim 1, wherein [an extracellular matrix is diffusedly distributed, and] the distribution densities of the extracellular matrix in two arbitrary sections of 1 cm² in the tissue have a ratio within a range of about 1:3 to about 3:1.

16. (Original) A synthetic tissue according to claim 1, which is heterologous, allogenic, isologous, or autogenous.

17. Canceled

Express Mail No.: EV719380358US
International Application No.: PCT/JP2004/011401
International Filing Date: 2 August 2004
Preliminary Amendment

18. (Original) A synthetic tissue according to claim 1, which is used to implant cells.

19. (Original) A synthetic tissue according to claim 1, which is large sized.

20. (Original) A synthetic tissue according to claim 1, which has a volume of at least about 20 mm³.

21. (Original) A synthetic tissue according to claim 1, which is flexible.

22. (Original) A synthetic tissue according to claim 1, which is expandable and contractile.

23. (Original) A synthetic tissue according to claim 1, which can withstand heart pulsation.

24. (Original) A synthetic tissue according to claim 1, which is biologically organized in all three dimensional directions.

25. (Original) A synthetic tissue according to claim 24, wherein the biological integration is selected from the group consisting of internal binding of extracellular matrix, electrical integration, and intercellular signal transduction.

26. (Original) A synthetic tissue according to claim 1, which has a tissue strength which allows the synthetic tissue to be clinically applicable.

Express Mail No.: EV719380358US
International Application No.: PCT/JP2004/011401
International Filing Date: 2 August 2004
Preliminary Amendment

27. (Original) A synthetic tissue according to claim 26, wherein the strength is a break strength of about 0.02 N to about 2 N.

28. (Original) A synthetic tissue according to claim 26, wherein the tissue strength is sufficient to provide self-supporting ability.

29. (Original) A synthetic tissue according to claim 28, wherein the self-supporting ability is characterized in that the synthetic tissue is not substantially broken when the synthetic tissue is picked up using forceps having a tip area of 0.05 to 3.0 mm².

30. (Original) A synthetic tissue according to claim 28, wherein the self-supporting ability is characterized in that the synthetic tissue is not broken when the synthetic tissue is picked up with a hand.

31. (Original) A synthetic tissue according to claim 26, wherein the site to which the synthetic tissue is intended to be applied, includes a heart.

32. (Original) A synthetic tissue according to claim 26, wherein the site to which the synthetic tissue is intended to be applied, includes an intervertebral disk, a meniscus, a cartilage, a bone, a ligament, or a tendon.

33. (Original) A synthetic tissue according to claim 26, wherein:
the synthetic tissue is a cartilage, an intervertebral disk, a meniscus, a ligament, or a tendon; and
the synthetic tissue remains attached without an additional fixation procedure, after the synthetic tissue is implanted into an injured portion of the intra-articular tissue.

Express Mail No.: EV719380358US
International Application No.: PCT/JP2004/011401
International Filing Date: 2 August 2004
Preliminary Amendment

34. (Original) A method for producing a synthetic tissue, comprising the steps of:

- A) providing cells;
- B) placing the cells in a container, the container having cell culture medium containing an ECM synthesis promoting agent and having a sufficient base area which can accommodate a synthetic tissue having a desired size;
- C) culturing the cells in the container along with the cell culture medium containing the ECM synthesis promoting agent for a period of time sufficient for formation of the synthetic tissue having the desired size; and
- D) detaching the cells from the container.

35.-70. Canceled

71. (Original) A cell culture composition for producing a synthetic tissue from cells, comprising:

- A) an element for maintaining the cells; and
- B) an extracellular matrix synthesis promoting agent.

72.-73. Canceled

74. (Original) A complex for reinforcing a portion of an organism, comprising cells and a component derived from the cells.

75.-96. Canceled

97. (Original) A method for reinforcing a portion of an organism, comprising the steps of:

Express Mail No.: EV719380358US
International Application No.: PCT/JP2004/011401
International Filing Date: 2 August 2004
Preliminary Amendment

A) replacing the portion with a complex comprising cells and a component derived from the cells or providing the complex to cover the portion, or both; and

B) holding the complex for a sufficient period of time for biologically adhering the complex to the portion.

98.-132. Canceled

133. (Original) A method for treating a portion of an organism, comprising the steps of:

A) replacing the portion with a complex comprising cells and a component derived from the cells or providing the complex to cover the portion, or both; and

B) holding the complex for a sufficient period of time for restoring a condition of the portion.

134.-141. Canceled

142. (Original) A method for producing a synthetic tissue, comprising the steps of:

A) providing cells;

B) placing the cells in a container, the container having cell culture medium containing an ECM synthesis promoting agent and having a sufficient base area which can accommodate a synthetic tissue having a desired size;

C) culturing the cells in the container along with the cell culture medium containing the ECM synthesis promoting agent for a period of time sufficient for formation of the synthetic tissue having the desired size; and

Express Mail No.: EV719380358US
International Application No.: PCT/JP2004/011401
International Filing Date: 2 August 2004
Preliminary Amendment

D) regulating a thickness of the synthetic tissue by a physical or chemical stimulus to a desired thickness.

143.-148. Canceled

149. (Original) A tissue complex, comprising an implantable synthetic tissue and another synthetic tissue.

150.-157. Canceled

158. (Original) A composition for use in producing a synthetic tissue having a desired thickness, comprising a chemical substance selected from the group consisting of actin depolymerizing agents and actin polymerizing agents.

159.-160. Canceled